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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,820	02/15/2002	Martin Abadi	18973-71 (PD26086US-1)	2470
37509	7590	03/08/2006	EXAMINER	
DECHERT LLP			WONG, BLANCHE	
P.O. BOX 10004			ART UNIT	
PALO ALTO, CA 94303			PAPER NUMBER	

2667

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/076,820

Applicant(s)

ABADI ET AL.

Examiner

Blanche Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. Examiner notes that two sets of drawings were submitted. The latest drawing, dated April 22, 2002, is used for examination.
2. The drawings are objected to because Fig. 12 is missing from the drawings of April 22, 2002.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "96" has been used to designate a TAXI transmitter, the TAXI Tx circuit, and TAXI, on p. 11 of the Specification. Reference character "32" has been used to designate both bus and array, on p. 13 of the Specification. Reference character "200" has been used to designate both network and switches, on p. 13 of the Specification. Examiner notes that these objections are all found in the Preliminary Amendment.

### ***Specification***

4. The abstract of the disclosure is objected to because it is the same as the abstract of U.S. Pat No. 6,480,502 and does not differentiate the invention.

Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

5. Claim 3 is objected to because of the following informalities: -- control – should be "controls" in ln. 2. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 4,5-19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the switch ports" in ln. 5.

Claim 5 recites the limitation "the routing logic circuit" in ln. 7 and "the selected copy" in ln. 14. Similar problem with claim 19.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1-6,12,19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Thacker et al. (U.S. Pat No. 5,179,558) in view of Cotton et al. (U.S. Pat No. 4,740,954).

With regard to claim 1, Thacker discloses a switch (Fig. 2) comprising:

means for receiving 212,214 (crossbar switch and switch ports/link control units, col. 3, ln. 7-9; see also the right arrows into switch ports and then to crossbar switch) at a current switch 210 (switch, col. 3, ln. 6) a copy of a broadcast packet (col. 6, ln. 58) of a broadcast ("broadcast", col. 6, ln. 25) from each switch (hosts on the network, col. 6, ln. 24);

means for selecting 218 (router/routing logic circuit, col. 3, ln. 10-11) a copy of the broadcast packet of the broadcast (received packet is stored in a FIFO buffer, col. 5, ln. 42 and then one packet is selected using a first come, first considered routing priority, col. 5, ln. 9; see also routing request selector circuit 424, col. 5, ln. 45, based on a selected routing mask output, col. 6, ln. 4); and

means for forwarding 212,214 (crossbar switch and switch ports/link control units, col. 3, ln. 7-9; see also left arrows from crossbar switch to switch ports and out of switch port) copies of the selected copy of the broadcast packet of the broadcast (broadcast packets must be simultaneously routed to all the output links specified by the routing mask, col. 6, ln. 58-60)

However, Thacker fails to explicitly show receiving a copy of a broadcast packet from each switch, descendent switches, and forwarding copies to all the descendents of a switch.

In an analogous art, Cotton teaches multicasting (col. 1, ln. 10-13) (It is Examiner's position that multicasting would include receiving a copy of a packet from each switch and forwarding copies to all the descendents of a switch) in a packet

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switching network arranged to form a spanning tree (col. 3, ln. 40) (It is Examiner's position that the spanning tree would include descendent switches).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include Cotton's teaching of receiving a copy of a broadcast packet from each switch, descendent switches, and forwarding copies to all the descendents of a switch in Thacker's system. The suggestion/motivation for doing so would have been to provide for a routing algorithm which will route packets correctly and efficiently. Cotton, col. 2, ln. 22. Therefore, it would have been obvious to combine Cotton with Thacker for the benefit of a multicast routing algorithm, to obtain the invention as specified in claim 1.

With regard to claim 2, the combination of Thacker and Cotton discloses a switch as recited in claim 1. Thacker further discloses the means for receiving includes a plurality of switch ports (switch ports/link control units 214, col. 3, ln. 7-9), each port being configured to connect to a link 215 (duplex link, col. 3, ln. 20) in the network.

With regard to claim 3, the combination of Thacker and Cotton discloses a switch as recited in claim 1. Thacker further discloses the means for selecting includes a routing control circuit (router/routing logic circuit 218, col. 3, ln. 10-11) that controls the routing of the packets in the switch.

With regard to claim 4, the combination of Thacker and Cotton discloses a switch as recited in claim 1. Thacker further discloses

the means for receiving includes a plurality of switch ports (switch ports/link control units 214, col. 3, ln. 7-9), each port being configured to connect to a link 215 (duplex link, col. 3, ln. 20) in the network; and

the means for forwarding includes a crossbar connection unit (crossbar switch 212, col. 3, ln. 7) that is configured to interconnect the plurality of switch ports (Fig. 2).

With regard to claim 5, Thacker discloses a switch for a mesh connected network (a mesh connected local area network 100, col. 2, ln. 52-53; see also Fig. 1) comprising:

a plurality of switch ports (switch ports/link control units 214, col. 3, ln. 7-9) that are each configured to connect to a link (duplex link, col. 3, ln. 20) in the network and to receive, in a broadcast ("broadcast", col. 6, ln. 25), from a connected link, a copy of a broadcast packet (col. 6, ln. 58);

a crossbar connection unit (crossbar switch 212, col. 3, ln. 7) that is connected to a routing logic circuit (router/routing logic circuit 218, col. 3, ln. 10-11) and the plurality of switch ports (switch ports/link control units 214, col. 3, ln. 7-9), and configured, in a broadcast ("broadcast", col. 6, ln. 25), to forward, from a selected switch port (the router 218 is to determine which output link unit 222, col. 3, ln. 36-37); and

wherein a routing logic circuit (router/routing logic circuit 218, col. 3, ln. 10-11) that is connected to the crossbar connection unit (crossbar switch 212, col. 3, ln. 7) to

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control the routing of packets in the crossbar connection unit, and configured, in a broadcast, to select one of the switch ports (the router 218 is to determine which output link unit 222, col. 3, ln. 36-37) that has a copy of the broadcast packet of the broadcast and any other ports as output ports for transmitting a selected copy (received packet is stored in a FIFO buffer, col. 5, ln. 42 and then one packet is selected using a first come, first considered routing priority, col. 5, ln. 9; see also routing request selector circuit 424, col. 5, ln. 45, based on a selected routing mask output, col. 6, ln. 4) of the broadcast packet (col. 6, ln. 58).

However, Thacker fails to explicitly show receiving a broadcast packet from each switch for which the switch is a descendent switch, forwarding copies of the broadcast packet of the broadcast to any ports having connected links to descendents of the switch in the network, and transmitting a copy of the broadcast packet to descendents of the switch.

In an analogous art, Cotton teaches multicasting (col. 1, ln. 10-13) (It is Examiner's position that multicasting would include receiving a broadcast packet from each switch for which the switch is a descendent switch, forwarding copies of the broadcast packet of the broadcast to any ports having connected links to descendents of the switch in the network, and transmitting a copy of the broadcast packet to descendents of the switch) in a packet switching network arranged to form a spanning tree (col. 3, ln. 40) (It is Examiner's position that the spanning tree would include descendent switches).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include receiving a broadcast packet from each switch for which the switch is a descendent switch, forwarding copies of the broadcast packet of the broadcast to any ports having connected links to descendents of the switch in the network, and transmitting a copy of the broadcast packet to descendents of the switch. The suggestion/motivation for doing so would have been to provide for a routing algorithm which will route packets correctly and efficiently. Cotton, col. 2, ln. 22. Therefore, it would have been obvious to combine Cotton with Thacker for the benefit of a multicast routing algorithm, to obtain the invention as specified in claim 5.

With regard to claim 6, the combination of Thacker and Cotton discloses a switch as recited in claim 5. Thacker further discloses the crossbar connection unit (crossbar switch 212, col. 3, ln. 7) that is configured to forward copies of the selected copy of the broadcast packet simultaneously (simultaneously routed, col. 6, ln. 59).

With regard to claim 12, the combination of Thacker and Cotton discloses a switch as recited in claim 5. Thacker further discloses a routing logic unit (router/routing logic circuit 218, col. 3, ln. 10-11; see also routing request selector circuit 424, col. 5, ln. 45) that is configured to recognize at least two concurrent but separate (one or more routing requests, col. 5, ln. 47) broadcasts in the network.

With regard to claim 19, Thacker discloses

a plurality of switches (S in Fig. 1) for routing data packets between hosts (H in Fig. 1) in the network; and

a plurality of point-to-point links, each providing a connection between a pair of switches (see double lines between S's in Fig. 1) or between a switch and a host (see single line between S and H in Fig. 1) in the network (100 in Fig. 1);

wherein each switch includes: (see also claim 5)

a plurality of switch ports (switch ports/link control units 214, col. 3, ln. 7-9) that are each configured to connect to a link (duplex link, col. 3, ln. 20) in the network and to receive, in a broadcast ("broadcast", col. 6, ln. 25), from a connected link, copy of a broadcast packet (col. 6, ln. 58);

a crossbar connection unit (crossbar switch 212, col. 3, ln. 7) that is connected to a routing logic circuit (router/routing logic circuit 218, col. 3, ln. 10-11) and the plurality of switch ports (switch ports/link control units 214, col. 3, ln. 7-9), and configured, in a broadcast ("broadcast", col. 6, ln. 25), to forward, from a selected switch port (the router 218 is to determine which output link unit 222, col. 3, ln. 36-37); and

wherein a routing logic circuit (router/routing logic circuit 218, col. 3, ln. 10-11) that is connected to the crossbar connection unit (crossbar switch 212, col. 3, ln. 7) to control the routing of packets in the crossbar connection unit, and configured, in a broadcast, to select one of the switch ports (the router 218 is to determine which output link unit 222, col. 3, ln. 36-37) that has a copy of the broadcast packet of the broadcast and any other ports as output ports for

transmitting a selected copy (received packet is stored in a FIFO buffer, col. 5, ln.42 and then one packet is selected using a first come, first considered routing priority, col. 5, ln. 9; see also routing request selector circuit 424, col. 5, ln. 45, based on a selected routing mask output, col. 6, ln. 4) of the broadcast packet (col. 6, ln. 58).

However, Thacker fails to explicitly show receiving a broadcast packet from each switch for which the switch is a descendent switch, forwarding copies of the broadcast packet of the broadcast to any ports having connected links to descendents of the switch in the network, and transmitting a copy of the broadcast packet to descendents of the switch.

In an analogous art, Cotton teaches multicasting (col. 1, ln. 10-13) (It would have been obvious in multicasting include receiving a broadcast packet from each switch for which the switch is a descendent switch, forwarding copies of the broadcast packet of the broadcast to any ports having connected links to descendents of the switch in the network, and transmitting a copy of the broadcast packet to descendents of the switch) in a packet switching network arranged to form a spanning tree (col. 3, ln. 40) (It would have been obvious that each lower layer of the spanning tree includes descendent switches).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include receiving a broadcast packet from each switch for which the switch is a descendent switch, forwarding copies of the broadcast packet of the broadcast to any ports having connected links to descendents of the switch in the network, and transmitting a copy of the broadcast packet to descendents of the switch.

The suggestion/motivation for doing so would have been to provide for a routing algorithm which will route packets correctly and efficiently. Cotton, col. 2, ln. 22.

Therefore, it would have been obvious to combine Cotton with Thacker for the benefit of a multicast routing algorithm, to obtain the invention as specified in claim 19.

11. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Thacker and Cotton as applied to claim 5 above, and further in view of Franaszek (U.S. Pat No. 4,845,706).

With regard to claim 7, the combination of Thacker and Cotton discloses a switch as recited in claim 5. Thacker further discloses a link connected to the switch that is a cross-link to a switch for which the switch is a descendent switch (mesh connected local area network in Fig. 1). However, neither Thacker nor Cotton fails to explicitly show a copy of the broadcast packet sent on the cross-link that is represented by a token that identifies the broadcast packet.

In an analogous art, Franaszek discloses an access token used to control access to a tree system (col. 4, ln. 56-57).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an access token. The suggestion/motivation for doing so would have been to provide for access to shared paths. Franaszek, col. 1, ln. 32-33.

Therefore, it would have been obvious to combine Franaszek with Thacker and Cotton for the benefit of an access token, to obtain the invention as specified in claim 7.

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. **Claim 1** is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,480,502. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the present application also claims "... receiving at a current switch a copy of a broadcast packet of a broadcast from each switch for which the current switch is a descendent switch; ... selecting a copy of the broadcast packet of the broadcast; and ... forwarding copies of the selected copy of the broadcast packet of the broadcast to all descendents of the current switch." The only difference between claim 1 of the present application and claim 1 of '502, is "sending copies of a broadcast packet of a broadcast from the root switch to all descendant switches; and at each

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descendant switch considered as the current switch.” It is Examiner’s position that at the time of the invention, it would have been obvious to a person of ordinary skill in the art to omit the step “sending copies of a broadcast packet of a broadcast from the root switch to all descendant switches; and at each descendant switch considered as the current switch” because a network that is logically represented by a spanning tree would include this step.

***Allowable Subject Matter***

14. Claim 8-11,13-18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

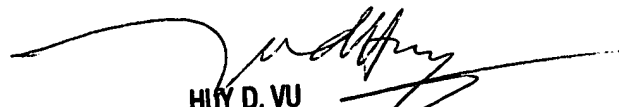
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Chi H. Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



BW  
March 2, 2006

  
HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600